



Sigen Energy Controller

- 3.0 – 12.0 kW | Single Phase
- 5.0 – 30.0 kW | Three Phase
- 5.0 – 12.0 kW | Three Phase Low Voltage



- EMS-integrated intelligent management for precision control
- Max. 2.0 DC/AC ratio compatibility, higher energy utilization (single phase)
- Unbalanced 3-phase power output, ensuring efficient operation
- 150% peak output power in off-grid mode, instant high-power boost
- Up to 4 MPPT trackers for maximum solar energy extraction

Sigen Energy Controller 3.0-12.0 kW Single Phase ¹

SigenStor EC	3.0 SP	3.6 SP	4.0 SP	4.6 SP	5.0 SP	6.0 SP	8.0 SP	10.0 SP	12.0 SP	Units	
DC Input (from PV)											
Max. PV power	6000	7360	8000	9200	10000	12000	16000	20000	24000	W	
Max. DC input voltage ²	600									V	
Nominal DC input voltage	350									V	
Start-up voltage	100									V	
MPPT voltage range	50 - 550									V	
Number of MPPT trackers	2						3	4	4		
Number of PV strings per MPPT	1										
Max. input current per MPPT	16									A	
Max. short-circuit current per MPPT	20									A	
AC Output (on-grid)											
Nominal output power	3000	3680	4000	4800	5000	6000	8000	10000	12000	W	
Max. output apparent power	3300	3680	4400	5000	5500	6800	8800	11000	12000	VA	
Nominal output current	13.6	16.0	18.2	20.9	22.7	27.3	36.4	45.5	54.6	A	
Max. output current	15.0	16.0	20.0	22.7	25.0	30.0	40.0	50.0	54.6	A	
Nominal output voltage	220 / 230 / 240						220 / 230			V	
Nominal grid frequency					50 / 60						Hz
Power factor	0.8 leading - 0.8 lagging										
Total current harmonic distortion	THDi < 2%										
Efficiency											
Max. efficiency	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	97.6%	97.6%	97.6%		
European efficiency	97.0%	97.1%	97.2%	97.3%	97.4%	97.4%	97.0%	97.0%	97.0%		
AC Output (backup)											
Peak output power (10 seconds)	4500	5520	6000	6900	7500	9000	12000	15000	15000	W	
Nominal output voltage	220 / 230 / 240						220 / 230			V	
Nominal output frequency					50 / 60						Hz
Power factor	0.8 leading - 0.8 lagging										
Total voltage harmonic distortion	THDv < 2%										
Disruption time of backup switch ³	0									ms	
Battery Connection											
Battery module models	SigenStor BAT series										
Number of modules per controller	1 - 6									pcs	
Battery module voltage range	300 - 600									V	
Protection											
Safety protection feature	DC reverse polarity protection, Insulation protection, Residual current monitoring, Arc fault circuit interrupter ⁴ , AC overcurrent/overvoltage/short-circuit protection, Type II DC/AC surge protection, Anti-islanding protection										
General Data											
Dimensions (W / H / D)	700 / 300 / 245			700 / 300 / 260			mm				
Weight	18			36			kg				
Storage temperature range	-40 - 70									°C	
Operating temperature range	-30 - 60									°C	
Relative humidity range	0% - 100%										
Max. operating altitude	4000									m	
Cooling	Natural convection					Smart air cooling					
System ingress protection rating	IP66										
Communication	WLAN / Fast Ethernet / RS485 / Sigen CommMod (4G/3G/2G)										
Standard Compliance											
Standard ⁵	IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1, IEC/EN 61000-6-2										

- ¹ Sigen Energy Controller 3.0-12.0 kW Single Phase is only available in specific regions. Please contact Sigen Energy or local distributors for details.
- ² The inverter will initiate protection if the input voltage exceeds the MPPT operating voltage range.
- ³ This refers to the load-side disruption time, to achieve this functionality Sigen Energy Gateway needs to be used together with Sigen Energy Controller and Sigen Battery.
- ⁴ Test conditions: In the open-circuit state of the power grid, the nominal power of the Sigen Energy Controller is higher than the total power of the home loads.
- ⁵ This is an optional feature only supported in certain models, please contact Sigen Energy for more information.

⁶ For all standards refer to the certificates category on the Sigen Energy website.

Signen Energy Controller 5.0-30.0 kW Three Phase ¹

SignenStor EC	5.0 TP	6.0 TP	8.0 TP	10.0 TP	12.0 TP	15.0 TP	17.0 TP	20.0 TP	25.0 TP	30.0 TP	Units	
DC Input (from PV)												
Max. PV power	8000	9600	12800	16000	19200	24000	27200	32000	40000	48000	W	
Max. DC input voltage ²											1100	V
Nominal DC input voltage											600	V
Start-up voltage											190	V
MPPT voltage range											160 - 1000	V
Number of MPPT trackers	2			3			4					
Number of PV strings per MPPT											1	
Max. input current per MPPT											16	A
Max. short-circuit current per MPPT											20	A
AC Output (on-grid)												
Nominal output power	5000	6000	8000	10000	12000	15000	17000	20000	25000	30000	W	
Max. output apparent power	5500	6600	8800	11000	13200	16500	18700	22000	27500	33000	VA	
Nominal output current	7.6	9.1	12.2	15.2	18.2	22.8	25.8	30.4	38.0	45.5	A	
Max. output current	8.4	10.0	13.4	16.7	20.1	25.1	28.4	33.4	41.8	50.0	A	
Nominal output voltage											380 / 400, 3W-N+PE	V
Nominal grid frequency											50 / 60	Hz
Power factor											0.8 leading - 0.8 lagging	
Total current harmonic distortion											THDi < 2%	
Efficiency												
Max. efficiency	98.1%	98.2%	98.3%	98.3%	98.3%	98.3%	98.3%	98.3%	98.3%	98.4%		
European efficiency	96.1%	96.6%	97.1%	97.5%	97.7%	97.9%	97.9%	97.9%	98.0%	98.0%		
AC Output (backup)												
Peak output power (10 seconds)	7500	9000	12000	15000	18000	22500	25500	30000	30000	36000	W	
Nominal output voltage											380 / 400, 3W-N+PE	V
Nominal output frequency											50 / 60	Hz
Power factor											0.8 leading - 0.8 lagging	
Total voltage harmonic distortion											THDv < 2%	
Disruption time of backup switch ³											0	ms
Battery Connection												
Battery module models											SignenStor BAT series	
Number of modules per controller											1 - 6	pcs
Battery module voltage range											800 - 900	V
Protection												
Safety protection feature											DC reverse polarity protection, Insulation monitoring, Residual current monitoring, Arc fault circuit interrupter ⁴ , AC overcurrent/overvoltage/short-circuit protection, Type II DC/AC surge protection, Anti-islanding protection	
General Data												
Dimensions (W / H / D)											700 / 300 / 260	mm
Weight											38	kg
Storage temperature range											-40 - 70	°C
Operating temperature range											-30 - 60	°C
Relative humidity range											0% - 100%	
Max. operating altitude											4000	m
Cooling											Smart air cooling	
System ingress protection rating											IP66	
Communication											WLAN / Fast Ethernet / RS485 / Signen CommMod (4G/3G/2G)	
Standard Compliance												
Standard ⁵											IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1, IEC/EN 61000-6-2	

1. Signen Energy Controller 30.0 kW Three Phase is only available in specific regions. Please contact SignenEnergy or local distributors for details.
2. The inverter will initiate protection if the input voltage exceeds the MPPT operating voltage range.
3. This refers to the back-side disconnection time, to achieve this functionality Signen Energy Gateway needs to be used together with Signen Energy Controller and Signen Battery.
4. Test conditions: In the open-circuit state of the power grid, the nominal power of the Signen Energy Controller is higher than the total power of the home loads.
5. This is an optional feature only supported in certain models, please contact SignenEnergy for more information.
6. For all standards refer to the certificates category on the SignenEnergy website.

Signen Energy Controller 5.0-12.0 kW Three Phase Low Voltage ¹

SignenStor EC	5.0 TPLV	6.0 TPLV	8.0 TPLV	10.0 TPLV	12.0 TPLV	Units	
DC Input (from PV)							
Max. PV power	8000	9600	12800	16000	19200	W	
Max. DC input voltage ²						600	V
Nominal DC input voltage						380	V
Start-up voltage						100	V
MPPT voltage range						50 - 550	V
Number of MPPT trackers	2	2	3	3	4		
Number of PV strings per MPPT						1	
Max. input current per MPPT						16	A
Max. short-circuit current per MPPT						20	A
AC Output (on-grid)							
Nominal output power	5000	6000	8000	10000	12000	W	
Max. output apparent power	5500	6600	8800	11000	13200	VA	
Nominal output current	13.2	15.8	21.0	26.2	31.5	A	
Max. output current	14.5	17.4	23.1	28.9	34.7	A	
Nominal output voltage						220 / 230	V
Nominal grid frequency						50 / 60	Hz
Power factor						0.8 leading - 0.8 lagging	
Total current harmonic distortion						THDi < 2%	
Efficiency							
Max. efficiency						98%	
European efficiency	97.3%	97.5%	97.7%	97.8%	97.8%		
Battery Connection							
Battery module models						SignenStor BAT series	
Number of modules per controller						1 - 6	pcs
Battery module voltage range						300 - 600	V
Protection							
Safety protection feature						DC reverse polarity protection, Insulation monitoring, Residual current monitoring, Arc fault circuit interrupter ⁴ , AC overcurrent/overvoltage/short-circuit protection, Type II DC/AC surge protection, Anti-islanding protection	
General Data							
Dimensions (W / H / D)						700 / 300 / 260	mm
Weight						38	kg
Storage temperature range						-40 - 70	°C
Operating temperature range						-30 - 60	°C
Relative humidity range						0% - 100%	
Max. operating altitude						4000	m
Cooling						Smart air cooling	
System ingress protection rating						IP66	
Communication						WLAN / Fast Ethernet / RS485 / Signen CommMod (4G/3G/2G)	
Standard Compliance							
Standard ⁴						IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1, IEC/EN 61000-6-2	

1. Signen Energy Controller Three Phase Low Voltage is only available in specific regions. Please contact SignenEnergy or local distributors for details.
2. The inverter will initiate protection if the input voltage exceeds the MPPT operating voltage range.
3. This is an optional feature only supported in certain models, please contact SignenEnergy for more information.
4. For all standards refer to the certificates category on the SignenEnergy website.

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